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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,662	05/30/2001	Hideaki Kuroda	SON-1199/CON	6271

7590

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EXAMINER

PRENTY, MARK V

ART UNIT

PAPER NUMBER

2822

8

DATE MAILED: 04/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/866,662

Applicant(s)
KURODA

Examiner
Prenty

Art Unit
2822



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb 5, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-6 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

This Office Action is in response to the papers filed February 5, 2003.

Claims 3-6 are rejected under 35 U.S.C. §102 as being anticipated by Prior Art Figs. 4-17.

With respect to independent claim 3, Prior Art Figs. 4-17 disclose a semiconductor device, comprising: a conductive layer pattern 111 formed on a substrate; an inter-layer insulating film 154 which covers said conductive layer pattern and is formed on said substrate; a first connection hole formed in a upper layer of said inter-layer insulating film above said conductive layer pattern (see the specification at the paragraph bridging pages 5 and 6); a second connection hole which reaches said conductive layer pattern from the bottom portion of said first connection hole and then has a smaller diameter than that of said first connection hole and formed on said inter-layer insulation film (again, see the specification at the paragraph bridging pages 5 and 6); and a plug 136 having conductivity formed in a state filling internal portions of said first connection hole and said second connection hole; an upper insulating film 157/158/162/163/164 formed on said inter-layer insulating film; a third connection hole which reaches said plug and is formed on said inter-layer insulating film; and a conductive portion 144 which is connected to said plug and formed in said third connection hole.

Claim 3 is thus rejected under 35 U.S.C. §102 as being anticipated by Prior Art Figs. 4-17.

With respect to independent claim 4, Prior Art Figs. 4-17 disclose a semiconductor device, comprising: a conductive layer pattern 111 formed on a substrate; an inter-layer insulating film 154 which covers said conductive layer pattern and is formed on said substrate; a first connection hole formed in a upper layer of said

inter-layer insulating film above said conductive layer pattern (see the specification at the paragraph bridging pages 5 and 6); a second connection hole which reaches said conductive layer pattern from the bottom portion of said first connection hole and then has a smaller diameter than that of said first connection hole and formed on said inter-layer insulation film (again, see the specification at the paragraph bridging pages 5 and 6); and a plug 136 having conductivity formed in a state filling internal portions of said first connection hole and said second connection hole; wherein the upper surface of said plug is formed to almost the same height as the surface height of said inter-layer insulating film; an upper insulating film 157/158/162/163/164 formed on said inter-layer insulating film; a third connection hole which reaches said plug and is formed on said inter-layer insulating film; and a conductive contact portion 144 which is connected to said plug and formed in said third connection hole.

Claim 4 is thus rejected under 35 U.S.C. §102 as being anticipated by Prior Art Figs. 4-17.

With respect to dependent claims 5 and 6, Prior Art Figs. 4-17's plug 136 and conductive portion 144 are a storage node contact portion of a dynamic random access memory.

Claims 5 and 6 are thus rejected under 35 U.S.C. §102 as being anticipated by Prior Art Figs. 4-17.

The applicant's arguments with respect to the maintained rejection of claims 3-6 under 35 U.S.C. §102 as being anticipated by Prior Art Figs. 4-17 are not persuasive, because they fail to squarely address, let alone rebut, the statement of the rejection, particularly its reliance on the specification's description of Prior Art Figs. 4-17 at the paragraph bridging pages 5 and 6.

In this regard, it is unclear why the applicant apparently attempts to read the claimed first and second connection holes on Prior Art Fig. 8's contact holes NCH and BCH, because such a claim interpretation is contrary to both the applicant's invention and the statement of the rejection. Specifically, the disclosed and claimed first and second connection holes are not directed to two independent contact holes, but to a single composite contact hole comprising overlying first and second holes of different diameters (see the entire disclosure). Similarly, Prior Art Fig. 8's contact hole NCH is a composite contact hole comprising a first "preparatory" hole overlying a "shrunk" second hole (again, see the specification at the paragraph bridging pages 5 and 6).

In any event, the applicant's allegation that Prior Art Figs. 4-17 do not disclose claim 3's and claim 4's "a second connection hole which reaches said conductive layer pattern from the bottom portion of said first connection hole and then has a smaller diameter than that of said first connection hole and formed on said inter-layer insulation film," is incorrect. Prior Art Figs. 4-17 clearly disclose such a second connection hole (i.e., the narrower bottom portion of Prior Art Fig. 8's node contact hole NCH, as described in the specification at the paragraph bridging pages 5 and 6).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. §1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. §1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Registered practitioners can telephone the examiner at (703) 308-4939. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the application's Serial Number. Technology Center 2800's general telephone number is (703) 308-0956.

Mark Prentz
Mark V. Prentz
Primary Examiner